

AT-CM3K0S Gigabit Ethernet Media Converter Installation Guide

Overview

The AT-CM3K0S Media Converter is a member of the Converteon family of media converter products. It is a simple and reliable way to connect Fast or Gigabit Ethernet networks across small or large geographical distances with fiber optic cable. The product features a 10/100/1000Base-T port for a local connection and a slot for a 100Base-FX or 1000Base-X SFP module for a remote connection using multimode or single-mode fiber optic cable. The features of the media converter are listed here.

10/100/1000Base-T Twisted Pair Port	<input type="checkbox"/> IEEE 802.3u Auto-Negotiation <input type="checkbox"/> Half- or full-duplex mode <input type="checkbox"/> Auto-MDI/MDI-X <input type="checkbox"/> RJ-45 connector <input type="checkbox"/> IEEE 802.3x flow control at 10, 100, or 1000 Mbps
SFP Slot	Supports 100Base-FX and 1000Base-X SFP modules (SFP module sold separately.)
Operating Modes	<input type="checkbox"/> Link Test <input type="checkbox"/> MissingLink™ <input type="checkbox"/> Smart MissingLink The operating modes can be activated with or without support for Operations, Administration, and Maintenance.
Operations, Administration, and Maintenance (OAM) Features	<input type="checkbox"/> Loopback test* <input type="checkbox"/> Remote Converteon line card management* <input type="checkbox"/> Remote management software downloads* <input type="checkbox"/> Dying gasp** <input type="checkbox"/> Variable requests*
Other Features	<input type="checkbox"/> Jumbo frames up to 10,240 bytes <input type="checkbox"/> Ingress and egress packet rate limiting* <input type="checkbox"/> Operating mode and port status LEDs <input type="checkbox"/> Low power mode <input type="checkbox"/> Cyclical redundancy check <input type="checkbox"/> Suitable for managed and unmanaged network environments <input type="checkbox"/> Management available with the AT-CV5M02 Management Card <input type="checkbox"/> AT-S102 Management Software (preinstalled)

(* Requires the AT-CV5M02 Management Card.)

(** Requires the AT-CV5M02 Management Card in the upstream AT-CV5000 Chassis.)

Note

This line card cannot be managed with the AT-CV5M01 Management Card.

Converteon Enclosures

This product is supported in all four Converteon enclosures:

- AT-CV5000 Chassis
- AT-CV1203 Chassis
- AT-CV1200 Chassis
- AT-CV1000 Chassis

Related Documents

For background information on the Converteon products, refer to the *Converteon AT-S73, AT-S99, and AT-S102 Management Software User's Guide*, available from the Allied Telesis web site.

Verifying the Package Contents

The following items should be in the shipping container:

- One AT-CM3K0S Media Converter
- This Installation Guide
- Warranty card

If any item is missing or damaged, contact your Allied Telesis sales representative for assistance. You should retain the original shipping material in case you need to return the unit to Allied Telesis.



Caution

The media converter line card is sensitive to and can be damaged by electrostatic discharge. Wear a grounding device and observe electrostatic discharge precautions when installing the card in the chassis.

Reviewing Safety Precautions

Before installing the media converter, review the safety precautions detailed in the Converteon chassis' Installation Guide.

Cable Specifications

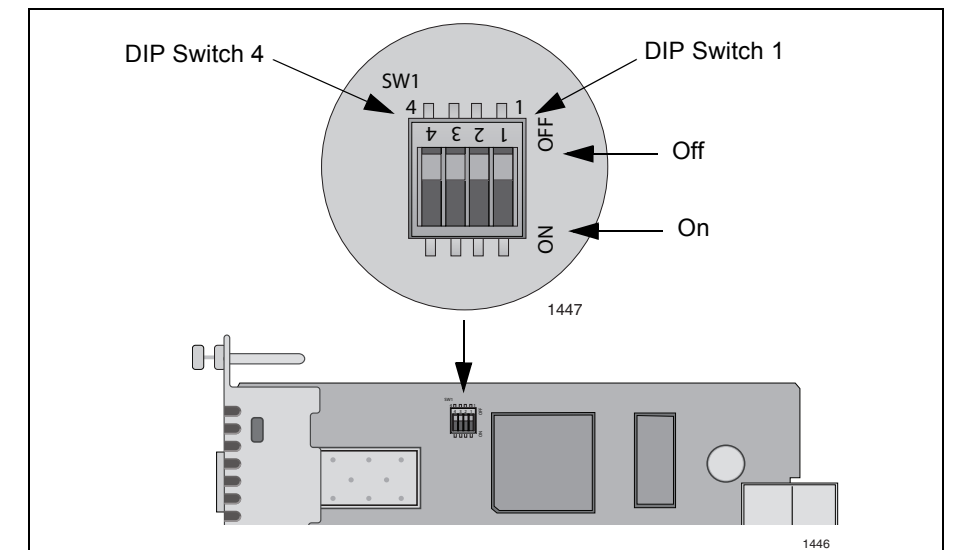
The cable specifications for the 10/100/1000Base-T twisted pair port are listed here.

Speed	Cable Type	Maximum Operating Distance
10 Mbps	Standard TIA/EIA 568-B-compliant Category 3 or better shielded or unshielded cabling with 100 ohm impedance and a frequency of 16 MHz.	100 m (328 ft)
100 Mbps	Standard TIA/EIA 568-A-compliant Category 5 or TIA/EIA 568-B-compliant Enhanced Category 5 (Cat 5e) shielded or unshielded cabling with 100 ohm impedance and a frequency of 100 MHz.	100 m (328 ft)
1000 Mbps	Standard TIA/EIA 568-A-compliant Category 5 or TIA/EIA 568-B-compliant Enhanced Category 5 (Cat 5e) shielded or unshielded cabling with 100 ohm impedance and a frequency of 100 MHz.	100 m (328 ft)

For the fiber optic cable specifications, refer to the SFP module instructions.

Setting the Operating Mode

There are DIP switches on the line card for setting the card's operating mode. You can also set the operating mode with the optional AT-CV5M02 Management Card. To use the DIP switches, refer to the figure and table. For background information on the operating modes, refer to the *Converteon AT-S73, AT-S99, and AT-S102 Management Software User's Guide*.



Operating Mode	Switch 4	Switch 3	Switch 2	Switch 1
Link Test (default setting)	Off	Off	Off	Off
MissingLink	Off	Off	Off	On
Smart MissingLink	Off	Off	On	Off
Link Test with OAM	Off	On	Off	Off
MissingLink with OAM	Off	On	Off	On
Smart MissingLink with OAM	Off	On	On	Off

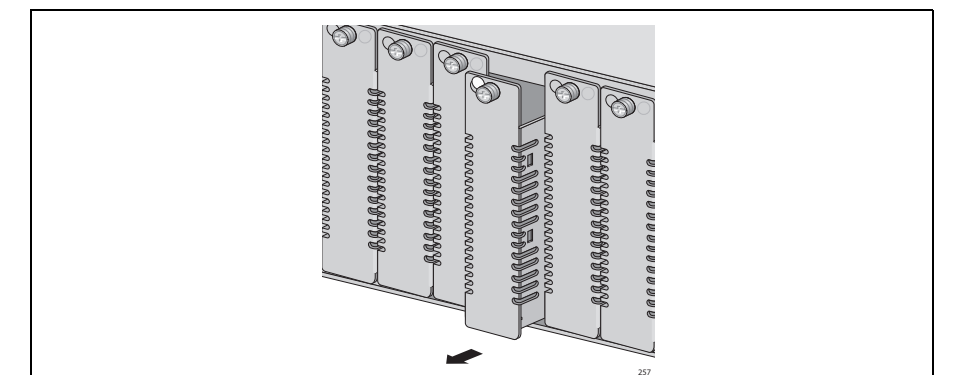
Installing the Media Converter

Note

The media converter supports hot swapping and can be installed while the chassis is powered on.

To install the media converter:

1. Remove the slot cover from one of the slots in the Converteon chassis by loosening the captive screw with a Phillips head screwdriver. The unit can be installed in any of the media converter slots.



Note

Retain the slot cover and reinstall it if you ever remove the line card. An open slot allows dust to enter the unit and reduces proper airflow in the chassis.

2. Align the edges of the line card with the guides in the slot and carefully slide the card into the chassis until it is flush with the front of the chassis. Light pressure may be needed to seat the module on the connector on the backplane in the chassis.



- Secure the line card in the chassis by tightening the captive-screw with a Phillips head screwdriver.
- Remove the dust cover from the SFP slot.
- Slide the SFP module into the slot until it clicks into place.
- Remove the dust cover from the fiber optic port on the SFP module.
- Connect the fiber optic cable to the port on the SFP module.
- Connect a twisted pair cable to the RJ-45 twisted pair port on the line card.

LEDs

The RDY (Ready) LED displays general status information.

LED	State	Status/Operating Mode
RDY (Ready)	Off	The line card is initializing the AT-S102 Management Software, which takes approximately one minute, or the card is not receiving power.
	Green	The line card has initialized its management software and is ready to transfer network traffic.

The operating mode of the line card is displayed by the SML, ML and OAM LEDs.

Operating Mode	LEDs		
	SML (Smart MissingLink)	ML (Missing Link)	OAM (Operations, Administration and Maintenance)
Link Test mode	Off	Off	Off
Link Test mode with OAM	Off	Off	On
MissingLink mode	Off	On	Off
MissingLink mode with OAM	Off	On	On
Smart MissingLink mode	On	Off	Off
Smart MissingLink mode with OAM	On	Off	On

The SFP slot has three LEDs.

LED	Color	Description
LK (Link)	Off	The fiber optic port on the SFP transceiver has not formed a link with the remote device.
	Green	The port has formed a link with the fiber port on the remote device.
	Blinking Green	The media converter is operating in the Smart MissingLink mode and the twisted pair port has not formed a link with a network device.
AT (Activity)	Off	The port is not connected to a fiber optic cable, has not formed a link with the remote device, or is not receiving or transmitting packets.
	Blinking Green	The fiber optic port on the SFP module is receiving or transmitting network packets.
1000M	Off	The SFP module is 100Base-FX.
	Green	The SFP module is 1000Base-X.

The 10/100/1000Base-T twisted pair port has five LEDs.

LED	Color	Description
LK (Link)	Off	The port has not formed a link with a network device.
	Green	The port has formed a link with a network device.
	Flashing Green	The media converter is operating in the Smart MissingLink mode and the fiber optic port on the SFP module has not formed a link with a network device.
AT (Activity)	Off	The port is not receiving or transmitting network packets.
	Blinking Green	The port is receiving or transmitting network packets.
FD (Full duplex)	Off	The port is operating in half-duplex mode.
	Green	The port is operating in full-duplex mode.
1000M and 100M	100M - Off 1000M - Off	The port is operating at 10 Mbps.
	100M - On 1000M - Off	The port is operating at 100 Mbps.
	100M - Off 1000M - On	The port is operating at 1000 Mbps.

Note

For more information on the Link LEDs, refer to the explanation of the media converter operating modes in the *Converteam AT-S73, AT-S99, and AT-S102 Management Software User's Guide*.

ECO Friendly Button

The recessed ECO Friendly button on the front panel of the line card is used to toggle the low power mode, which controls the LEDs. You can use the button to turn off the LEDs to conserve power when you are not monitoring them. To toggle the LEDs on or off, press the recessed button with a pointed object, such as the end of a straightened paperclip. You can also toggle the low power mode with the AT-CV5M02 Management Card. The low power mode does not affect the network operations of the line card or control the RDY LED.

Default Settings

The default settings for the media converter are listed here.

Feature	Default Setting
Basic Settings	
Operating Mode	Link Test
Maximum Frame Size	10240 bytes
Twisted Pair Port	Auto-Negotiation with auto-MDI/MDI-X
Ingress and Egress Filtering	None
Low Power Mode	Disabled
Operating Mode DIP Switches	Enabled
OAM Settings	
Admin State	Enabled
Mode	Passive
Maximum OAMPDU Size	1518 bytes

Feature	Default Setting
Loopback Support	Enabled
Variable Retrieval Support	Enabled

Technical Specifications


Physical and Environmental	
Dimensions (H x W x L)	22 mm x 73 mm x 130 mm (.86 in. x 2.9 in. x 5.1 in.)
Weight	113 grams (0.25 lb.)
Operating Temperature	0° C to 40° C (32° F to 104° F)
Storage Temperature	-25° C to 70° C (-13° F to 158° F)
Operating Relative Humidity	5% to 90% RH (non-condensing)
Storage Relative Humidity	5% to 95% RH (non-condensing)
Operating Altitude Range	Up to 3,048 m (10,000 ft.)
MTBF	1,530,000 hours
Optical	
Connector Type	SFP
Operating Speed	100 Mbps or 1000 Mbps (fixed speed)
Fiber Type	SFP Transceiver
Electrical Ratings	
Power Consumption	8.5 Watts maximum

Electrical, Safety, and Emissions Statements

Standards: This product meets the following standards when installed in compliant host equipment.

U.S. Federal Communications Commission	
RADIATED ENERGY	
Note: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.	
Note: Modifications or changes not expressly approved of by the manufacturer or the FCC, can void your right to operate this equipment.	
Industry Canada	
This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.	
Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.	

Emission FCC Class A, EN55022 Class A, VCCI Class A, C-TICK, CE

Warning
 In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Immunity EN55024

Electrical Safety UL60950-1 (cUL_{us}), EN60950-1 (TUV), CAN/CSA C22.2 No. 60950-1

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